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Cover:

Drawings by artist Paul Calle.

PREFACE

Of 108 pilots and scientists selected as astronauts since April 1959, 62 were on flight status in October 1979 as recruiting began for additional candidates. Thirty-one of the 62 were pilot astronauts and 31 were mission specialist or scientist astronauts.

Eight groups of astronauts have been selected. In Group 1 were the seven Mercury astronauts selected in April 1959. Nine test pilots, Group 2, were selected in September 1962. In Group 3 were 14 pilot astronauts selected in October 1963. Group 4, the first six scientist astronauts, was selected in June 1965. In April 1966, 19 pilot astronauts were selected in Group 5. Group 6, 11 scientist-astronauts, was selected in August 1967. Seven Air Force Manned Orbital Laboratory pilots joined the NASA pilot astronaut program in August 1969, as Group 7.

In January 1978, 35 astronaut candidates were selected by NASA to participate in a two-year training program at the Lyndon B. Johnson Space Center, Houston, Texas. This group of 20 mission specialists and 15 pilots began training in July 1978 and completed training in August 1979, joining the active astronaut corps a year earlier than anticipated as Group 8.

In August 1979, NASA announced that it would begin recruiting astronaut candidates annually. These new astronaut candidates will become Space Shuttle pilots and mission specialists upon completion of training. Announcement of annual recruiting periods will be issued well in advance of the dates when applications will be accepted.

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ALPHABETICAL LIST OF ALL ASTRONAUTS

<u>Name</u>	<u>Status</u>	<u>Group</u>
Aldrin, Edwin E., Jr.	Retired	3
Allen, Joseph P.	Flight	6
Anders, William A.	Retired	3
Armstrong, Neil A.	Resigned	2
Bassett, Charles A.	Deceased	3
Bean, Alan L.	Flight	3
Bluford, Guion S.	Flight	8
Bobko, Karol J.	Flight	7
Borman, Frank	Retired	2
Brand, Vance D.	Flight	5
Brandenstein, Daniel C.	Flight	8
Buchli, James F.	Flight	8
Bull, John S.	Resigned	5
Carpenter, M. Scott	Retired	1
Carr, Gerald P.	Retired	5
Cernan, Eugene A.	Retired	3
Chaffee, Roger B.	Deceased	3
Chapman, Philip K.	Resigned	6
Coats, Michael L.	Flight	8
Collins, Michael	Resigned	3
Conrad, Charles, Jr.	Retired	2
Cooper, L. Gordon	Retired	1
Covey, Richard O.	Flight	8
Creighton, John O.	Flight	8
Crippen, Robert L	Flight	7
Cunningham, Walter	Resigned	3
Duke, Charles M., Jr.	Resigned	5
Eisele, Donn F.	Retired	3
England, Anthony W.	Flight	6
Engle, Joe H.	Flight	5
Evans, Ronald E.	Retired	5
Fabian, John M.	Flight	8
Fisher, Anna L.	Flight	8
Freeman, Theodore C.	Deceased	3
Fullerton, Charles G.	Flight	7

-more-

<u>Name</u>	<u>Status</u>	<u>Group</u>
Gardner, Dale A.	Flight	8
Garriott, Owen K.	Flight	4
Gibson, Edward G.	Flight	4
Gibson, Robert L.	Flight	8
Givens, Edward G.	Deceased	5
Glenn, John H.	Retired	1
Gordon, Richard F., Jr.	Retired	3
Graveline, Duane E.	Resigned	4
Gregory, Frederick D.	Flight	8
Griggs, Stanley D.	Flight	8
Grissom, Virgil I.	Deceased	1
Haise, Fred W., Jr.	Resigned	5
Hart, Terry J.	Flight	8
Hartsfield, Henry W.	Flight	7
Hauck, Frederick H.	Flight	8
Hawley, Steven A.	Flight	8
Henize, Karl G.	Flight	6
Hoffman, Jeffrey A.	Flight	8
Holmquest, Donald L.	Resigned	6
Irwin, James B.	Retired	5
Kerwin, Joseph P.	Flight	4
Lenoir, William B.	Flight	6
Lind, Don L.	Flight	5
Llewellyn, John A.	Resigned	6
Lousma, Jack R.	Flight	5
Lovell, James A., Jr.	Retired	2
Lucid, Shannon W.	Flight	8
Mattingly, Thomas K. II	Flight	5
McBride, Jon A.	Flight	8
McCandless, Bruce II	Flight	5
McDivitt, James A.	Retired	2
McNair, Ronald E.	Flight	8
Michel, F. Curtis	Resigned	4
Mitchell, Edgar D.	Retired	5
Mullane, Richard M.	Flight	8
Musgrave, F. Story	Flight	6

<u>Name</u>	<u>Status</u>	<u>Group</u>
Nagel, Steven R.	Flight	8
Nelson, George D.	Flight	8
O'Leary, Brian T.	Resigned	6
Onizuka, Ellison S.	Flight	8
Overmyer, Robert F.	Flight	7
Parker, Robert A.	Flight	6
Peterson, Donald H.	Flight	7
Pogue, William R.	Retired	5
Resnik, Judith A.	Flight	8
Ride, Sally K.	Flight	8
Roosa, Stuart A.	Retired	5
Schirra, Walter M., Jr.	Retired	1
Schmitt, Harrison H.	Resigned	4
Schweickart, Russell L.	Resigned	3
Scobee, Francis R.	Flight	8
Scott, David R.	Retired	3
Seddon, Margaret R.	Flight	8
See, Elliott J.	Deceased	2
Shaw, Brewster H., Jr.	Flight	8
Shepard, Alan B., Jr.	Retired	1
Shriver, Loren J.	Flight	8
Slayton, Donald K.	Flight	1
Stafford, Thomas P.	Retired	2
Stewart, Robert L.	Flight	8
Sullivan, Kathryn D.	Flight	8
Swigert, John L., Jr.	Resigned	5
Thagard, Norman E.	Flight	8
Thornton, William E.	Flight	6
Truly, Richard H.	Flight	7
van Hoften, James D.	Flight	8
Walker, David M.	Flight	8
Weitz, Paul J.	Flight	5
White, Edward H. II	Deceased	2
Williams, Clifton C., Jr.	Deceased	3
Williams, Donald E.	Flight	8
Worden, Alfred M.	Retired	5
Young, John W.	Flight	2

STATUS, FLIGHTS AND AFFILIATIONS

Aldrin, Edwin E., Jr. -- Colonel, USAF (Ret.); retired; Group 3, October 1963; Gemini 12, Apollo 11; resigned from NASA July 1971 and served as Commander of the Air Force Aerospace Research Pilots School, Edwards, Calif., until he retired from active duty March 1, 1972; President of Research and Engineering Consultants, Inc., Los Angeles, Calif.

Allen, Joseph P. -- Civilian; Ph.D. (physics); flight; Group 6, August 1967; NASA Assistant Administrator for Legislative Affairs, August 1975-August 1978.

Anders, William A. -- Civilian; retired; Group 3, October 1963; Apollo 8; formerly U.S. Ambassador to Norway; formerly Chairman, Nuclear Regulatory Commission and a commissioner of the Atomic Energy Commission, August 1973; served as Executive Secretary, National Aeronautics and Space Council, 1969-1973; general manager, Nuclear Energy Products Division, General Electric Co., San Jose, Calif.

Armstrong, Neil A. -- Civilian; resigned; Group 2, September 1962; Gemini 8, Apollo 11; was Deputy Associate Administrator, Aeronautics, NASA Headquarters Office of Advanced Research and Technology, 1970; Professor of Engineering, University of Cincinnati, since October 1971.

Bassett, Charles A. -- Major, USAF; deceased; Group 3, October 1963; died in T-38 jet crash with Elliott See, Feb. 28, 1966, Lambert Municipal Airport, St. Louis.

Bean, Alan L. -- Captain, USN (Ret.); flight; Group 3, October 1963; Apollo 12, Skylab 3.

Bluford, Guion S. -- Major, USAF; flight; Group 8, selected January 1978, began training July 1978, named astronaut Aug. 1979.

Bobko, Karol J. -- Colonel, USAF; flight; Group 7, August 1969.

Borman, Frank -- Colonel, USAF (Ret.); retired; Group 2, September 1962; Gemini 7, Apollo 8; retired from NASA and Air Force in July 1970; President and Chief Executive Officer, Eastern Airlines, Miami, Fla.

Brand, Vance D. -- Civilian; flight; Group 5, April 1966; Apollo Soyuz Test Project.

Brandenstein, Daniel C. -- Lieutenant Commander, USN; flight; Group 8, selected January, began training July 1978, named astronaut August 1979.

Buchli, James F. -- Major, USMC; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Bull, John S. -- Lieutenant Commander, USN (Ret.); resigned; Group 5, April 1966; withdrew because of pulmonary disease July 1968. Employed in Guidance and Navigation Branch, NASA Ames Research Center, Mountain View, Calif.

Carpenter, M. Scott -- Commander, USN (Ret.); retired; Group 1, April 1959; Mercury 7; joined U.S. Navy Sealab program in 1967; retired from Navy July 1969 and is in private business, Los Angeles.

Carr, Gerald P. -- Colonel, USMC (Ret.); retired; Group 5, April 1966; Skylab 4; resigned June 25, 1977, to join Bovay Engineers, Inc., Houston, as Corporate Manager for Business Development.

Cernan, Eugene A. -- Captain, USN (Ret.); retired; Group 3, October 1963; Gemini 9, Apollo 10, Apollo 17; retired from the Navy and NASA July 1, 1976; Executive Vice President, International Coral Petroleum Co., Houston.

Chaffee, Roger B. -- Lieutenant Commander, USN; deceased; Group 3, October 1963; died in Apollo spacecraft fire, Kennedy Space Center, Jan. 27, 1967.

Chapman, Philip K. -- Civilian; Sc.D. (aeronautics and astronautics); resigned; Group 6, August 1967; resigned in July 1972; was principal research scientist with AVCO Everett Research Laboratories, Everett, Mass., and a senior research associate at the Massachusetts Institute of Technology Measurement Systems Laboratory, Cambridge, Mass.; with Arthur D. Little Co., Cambridge, Mass.

Coats, Michael L. -- Lieutenant Commander, USN; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Collins, Michael -- Civilian (Major General, USAF Reserve); resigned; Group 3, October 1963; Gemini 10, Apollo 11; became Assistant Secretary of State for Public Affairs in January 1970; became Director, National Air and Space Museum in February 1971; Under Secretary of the Smithsonian Institution, Washington, D.C., April 24, 1978.

Conrad, Charles, Jr. -- Captain, USN (Ret.); retired; Group 2, September 1962; Gemini 5, Gemini 11, Apollo 12, Skylab 2; retired Feb. 1, 1974. Vice President, International Commercial Sales, McDonnell Douglas Automation Co., Long Beach, Calif.

Cooper, L. Gordon -- Colonel, USAF (Ret.); retired; Group 1, April 1959; Mercury 9, Gemini 5; Vice President for Research and Development, WED Enterprises, Glendale, Calif.

Covey, Richard O. -- Major, USAF; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Creighton, John O. -- Lieutenant Commander, USN; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Crippen, Robert L. -- Commander, USN; flight; Group 7, August 1969; scheduled to pilot first Space Shuttle orbital test flight.

Cunningham, Walter -- Civilian; resigned; Group 3, October 1963; Apollo 7; resigned Aug. 1, 1971; Senior Vice President, 3D/International, Houston.

Duke, Charles M., Jr. -- Former USAF Colonel; resigned; Group 5, April 1966; Apollo 16; resigned from USAF, Jan. 1, 1976, to establish a business in San Antonio, Texas.

Eisele, Donn F. -- Colonel, USAF (Ret.); resigned; Group 3, October 1963; Apollo 7; resigned from NASA and retired from Air Force, July 1972 and joined the Peace Corps. Was technical assistant for manned space flight, NASA Langley Research Center, 1970-1972, before leaving to become Eastern Manager, Marion Power Shovel Co., Williamsburg, Va.; in 1979 he became Executive Vice President for Trans Carib Air, Washington, D.C.

England, Anthony W. -- Civilian; flight; Ph.D. (geology and physics); Group 6, August 1967; resigned in August 1972 to accept position with the U.S. Geological Survey; rejoined NASA in 1979 as a scientist-astronaut; will be a mission specialist on Space Shuttle.

Engle, Joe H. -- Colonel, USAF; flight; Group 5, April 1966; commanded Enterprise Space Shuttle free flight approach and landing tests 2 and 4, Sept. 13 and Oct. 12, 1977.

Evans, Ronald E. -- Captain, USN (Ret.); retired; Group 5, April 1966; Apollo 17; resigned March 15, 1977. Manager, Advanced Programs, Sperry Flight Systems, Phoenix, Ariz.

Fabian, John M. -- Lieutenant Colonel, USAF; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Fisher, Anna L. -- Civilian; M.D.; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Freeman, Theodore C. -- Captain, USAF; deceased; Group 3, October 1963; died in T-38 crash, Ellington AFB, Houston, Oct. 31, 1964.

Fullerton, Charles G. -- Lieutenant Colonel, USAF; flight; Group 7, August 1969; piloted Enterprise Space Shuttle free flight approach and landing tests 1, 3 and 5 on Aug. 12, Sept. 23 and Oct. 26, 1977.

Gardner, Dale A. -- Lieutenant, USN; flight, Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Garriott, Owen K. -- Civilian; Ph.D. (electrical engineering); flight; Group 4, June 1965; Skylab 3; Assistant Director for Space Sciences, Space and Life Sciences Directorate, Johnson Space Center.

Gibson, Edward G. -- Civilian; Ph.D. (engineering and physics); flight; Group 4, June 1965; Skylab 4.

Gibson, Robert L. -- Lieutenant Commander, USN; flight; Group 8, August 1979; will be a pilot on Space Shuttle.

Givens, Edward G. -- Major, USAF; deceased; Group 5, April 1966, died in an automobile accident near Houston, June 6, 1967.

Glenn, John H., Jr. -- Colonel, USMC (Ret.); resigned; Group 1, April 1959; Mercury 6; resigned in 1964; elected U.S. Senator (D-Ohio), November 1974.

Gordon, Richard F., Jr. -- Captain, USN (Ret.); retired; Group 3, October 1963; Gemini 11, Apollo 12; retired from Navy and NASA Jan. 1, 1972; President of REDCO, Inc., Houston.

Graveline, Duane E. -- Civilian, M.D.; resigned; Group 4, June 1965; resigned in August 1965; with Vermont Department of Public Health, Burlington.

Gregory, Frederick D. -- Major, USAF; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Griggs, Stanley D. -- Civilian; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Grissom, Virgil I. -- Lieutenant Colonel, USAF; deceased; Group 1, April 1959; Mercury 4, Gemini 3; died in Apollo spacecraft fire at Kennedy Space Center, Jan. 27, 1967.

Haise, Fred W., Jr. -- Civilian; resigned; Group 5, April 1966; Apollo 13; commanded Enterprise Space Shuttle free flight approach and landing tests 1, 3 and 5 on Aug. 12, Sept. 23 and Oct. 26, 1977; resigned from NASA in June 1979; Vice President for Space Programs, Grumman Aerospace Corp., Bethpage, N.Y.

Hart, Terry J. -- Civilian; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Hartsfield, Henry W., Jr. -- Colonel, USAF; flight; Group 7, August 1969.

Hauck, Frederick H. -- Commander, USN; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Hawley, Steven A. -- Civilian; Ph.D. (astronomy and astrophysics); flight; Group 8, August 1979; will be a mission specialist on Space Shuttle.

Henize, Karl G. -- Civilian; Ph.D. (astronomy); flight; Group 6, August 1967.

Hoffman, Jeffrey A. -- Civilian; Ph.D. (astrophysics); flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Holmquest, Donald L. -- Civilian; M.D., Ph.D. (physiology); resigned; Group 6, August 1967; took leave of absence May 1971 to hold position of Assistant Professor of Radiology and Physiology, Baylor College of Medicine, Houston. Later resigned from NASA to become Associate Dean of Medicine, Texas A&M University, College Station; with the Navasota Medical Center, Navasota, Texas.

Irwin, James B. -- Colonel, USAF (Ret.); retired; Group 5, April 1966; Apollo 15; retired from USAF and NASA Aug. 1, 1972; Chairman of the Board of Christian evangelical organization, High Flight Foundation, Colorado Springs, Colo.

Kerwin, Joseph P. -- Captain, USN; M.D.; flight; Group 4, June 1965; Skylab 2.

Lenoir, William B. -- Civilian; Ph.D. (electrical engineering); flight; Group 6, August 1967.

Lind, Don L. -- Civilian; Ph.D. (physics); flight; Group 5, April 1966.

Llewellyn, John A. -- Civilian; Ph.D. (chemistry); resigned; Group 6, August 1967; resigned August 1968; professor of chemistry, State University of Florida, Tallahassee.

Lousma, Jack R. -- Lieutenant Colonel, USMC; flight; Group 5, April 1966; Skylab 3.

Lovell, James A., Jr. -- Captain, USN (Ret.); retired; Group 2, September 1962; Gemini 7, Gemini 12, Apollo 8, Apollo 13; served as Deputy Director of Science and Applications, Johnson Space Center, May 1971-March 1973 when he retired from NASA and the Navy; president of Fisk Telephone Systems, Inc., Houston.

Lucid, Shannon W. -- Civilian; Ph.D. (biochemistry); flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Mattingly, Thomas K. II -- Commander, USN; flight; Group 5, April 1966; Apollo 16.

McBride, Jon A. -- Lieutenant Commander, USN; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

McCandless, Bruce II -- Commander, USN; flight; Group 5, April 1966.

McDivitt, James A. -- Brigadier General, USAF (Ret.); retired; Group 2, September 1962; Gemini 4, Apollo 9; was Manager, Apollo Spacecraft Program, Johnson Space Center, September 1969-1972; retired from NASA and the Air Force Sept. 1, 1972; President of Pullman Standard Co., Chicago.

McNair, Ronald E. -- Civilian; Ph.D. (physics); flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Michel, F. Curtis -- Civilian; Ph.D. (physics); resigned; Group 4, June 1965; resigned August 1969 to return to scientific research at Rice University, Houston.

Mitchell, Edgar D. -- Captain, USN (Ret.); retired; Group 5, April 1966; Apollo 14; retired Navy and NASA Oct. 1, 1972; President, Edgar D. Mitchell and Associates, Inc., Palm Beach, Fla.

Mullane, Richard M. -- Major, USAF; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Musgrave, F. Story -- Civilian; M.D., Ph.D. (physiology); flight; Group 6, August 1967.

Nagel, Steven R. -- Captain, USAF; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Nelson, George D. -- Civilian; Ph.D. (astronomy); flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

O'Leary, Brian T. -- Civilian; Ph.D. (astronomy); resigned; Group 6, August 1967; resigned for personal reasons, April 1968.

Onizuka, Ellison S. -- Captain, USAF; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Overmyer, Robert F. -- Lieutenant Colonel, USMC; flight; Group 7, August 1969.

Parker, Robert A. -- Civilian; Ph.D. (astronomy); flight; Group 6, August 1967.

Peterson, Donald H. -- Colonel, USAF; flight; Group 7, August 1969.

Pogue, William R. -- Colonel, USAF (Ret.); retired; Group 5, April 1966; Skylab 4; retired from NASA and Air Force; with Public Service Co. of Oklahoma, Tulsa.

Resnik, Judith A. -- Civilian; Ph.D. (electrical engineering); flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Ride, Sally K. -- Civilian; Ph.D. (physics); flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Roosa, Stuart A. -- Colonel, USAF (Ret.); retired; Group 5, April 1966; Apollo 14; retired from Air Force and NASA Feb. 1, 1976; president of Jet Industries, Austin, Texas.

Schirra, Walter M., Jr. -- Captain, USN (Ret.); retired; Group 1, April 1959; Mercury 8, Gemini 6, Apollo 7; retired in July 1969; heads Schirra Enterprises, a research and development firm, Englewood, Colo.

Schmitt, Harrison H. -- Civilian; Ph.D. (geology); resigned; Group 4, June 1965; Apollo 17; Special Assistant to NASA Administrator for Energy Research and Development, February 1974; appointed NASA Assistant Administrator for Energy Programs, May 1974; resigned from NASA August 1975; elected U.S. Senator (R-New Mexico), November 1976.

Schweickart, Russell L. -- Civilian; resigned; Group 3, October 1963; Apollo 9; transferred to NASA Headquarters, Washington, D.C., May 1, 1974; detailed to California Governor in 1977 under Intergovernmental Personnel Act; resigned in August 1979.

Scobee, Francis R. -- Major, USAF; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Scott, David R. -- Colonel, USAF (Ret.); resigned; Group 3, October 1963; Gemini 8, Apollo 9, Apollo 15; Special Assistant for Mission Operations, Apollo Spacecraft Program Office, Johnson Space Center from July 1972-August 1973; Deputy Director, NASA Hugh L. Dryden Flight Research Center, Edwards, Calif., from August 1973 until April 1975, when he was appointed Center Director; resigned from NASA Oct. 30, 1977, to enter private business -- Scott Science and Technology -- Los Angeles.

Seddon, Margaret R. -- Civilian; M.D.; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

See, Elliott J. -- Civilian; deceased; Group 2, September 1962; died in T-38 crash Feb. 28, 1966, Lambert Municipal Airport, St. Louis.

Shaw, Brewster H., Jr. -- Captain, USAF; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Shepard, Alan B., Jr. -- Rear Admiral, USN (Ret.); retired; Group 1, April 1959; Mercury 3, Apollo 14; retired from the Navy and NASA Aug. 1, 1974; President of Windward Co., Deer Park, Texas.

Shriver, Loren J. -- Captain, USAF; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Slayton, Donald K. -- Civilian; flight; Group 1, April 1959; Apollo Soyuz Test Project; Manager for Orbital Flight Tests, Space Shuttle Program Office, Johnson Space Center, Houston.

Stafford, Thomas P. -- Lieutenant General, USAF (Ret.); retired; Group 2, September 1962; Gemini 6, Gemini 9, Apollo 10, Apollo Soyuz Test Project; returned to active Air Force status Nov. 1, 1975, as Deputy Chief of Staff, Research and Development, Headquarters, USAF, Washington, D.C.; retired from Air Force Nov. 1, 1979.

Stewart, Robert L. -- Major, USA; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Sullivan, Kathryn D. -- Civilian; Ph.D. (geology); flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Swigert, John L., Jr. -- Civilian; resigned; Group 5, April 1966; Apollo 13; appointed Staff Director, Committee on Science and Astronautics, House of Representatives in April 1973; resigned from NASA and ran unsuccessfully for the U.S. Senate from Colorado in 1978; private consultant in Denver.

Thagard, Norman E. -- Civilian; M.D.; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Thornton, William E. -- Civilian; M.D.; flight; Group 6, August 1967.

Truly, Richard H. -- Commander, USN; flight; Group 7, August 1969; piloted Enterprise Space Shuttle free flight approach and landing tests 2 and 4 on Sept. 13 and Oct. 12, 1977.

van Hoften, James D. -- Civilian; Ph.D. (fluid mechanics); flight; Group 8, August 1979; will be a mission specialist on Space Shuttle.

Walker, David M. -- Lieutenant Commander, USN; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut Aug. 1979.

Weitz, Paul J. -- Captain, USN; flight; Group 5, April 1966; Skylab 2.

White, Edward H. II -- Lieutenant Colonel, USAF; deceased; Group 2, September 1962; Gemini 4; died in Apollo spacecraft fire at Kennedy Space Center Jan. 27, 1967.

Williams, Clifton C., Jr. -- Major, USMC; deceased; Group 3, October 1963; died in T-38 crash near Tallahassee, Fla., Oct. 5, 1967.

Williams, Donald E. -- Lieutenant Commander, USN; flight; Group 8, selected Jan. 1978, began training July 1978, named astronaut, Aug. 1979.

Worden, Alfred M. -- Colonel, USAF (Ret.); retired; Group 5, April 1966; Apollo 15; was Chief, Systems Studies Division, NASA Ames Research Center, Mountain View, Calif.; President of Americans for the National Dividend, a non-profit corporation and Energy Management Services, Palm Beach, Fla.

Young, John W. -- Captain, USN (Ret.); flight; Group 2, September 1962; Gemini 3, Gemini 10, Apollo 10, Apollo 16; Chief, Astronaut Office, Johnson Space Center, Houston; assigned as commander of first Space Shuttle orbital flight test.

ASTRONAUTS WHO HAVE FLOWN IN SPACE (43)

One Flight (26)

William A. Anders	Apollo 8
Vance D. Brand	Apollo Soyuz Test Project
M. Scott Carpenter	Mercury 7
Gerald P. Carr	Skylab 4
Walter Cunningham	Apollo 7
Charles M. Duke, Jr.	Apollo 16
Donn F. Eisele	Apollo 7
Ronald E. Evans	Apollo 17
Owen K. Garriott	Skylab 3
Edward G. Gibson	Skylab 4
John H. Glenn	Mercury 6
Fred W. Haise, Jr.	Apollo 13
James B. Irwin	Apollo 15
Joseph P. Kerwin	Skylab 2
Jack R. Lousma	Skylab 3
Thomas K. Mattingly, II	Apollo 16
Edgar D. Mitchell	Apollo 14
William R. Pogue	Skylab 4
Stuart A. Roosa	Apollo 14
Harrison H. Schmitt	Apollo 17
Russell L. Schweickart	Apollo 9
Donald K. Slayton	Apollo Soyuz Test Project
John L. Swigert, Jr.	Apollo 13
Paul J. Weitz	Skylab 2
Edward H. White, II	Gemini 4
Alfred M. Worden	Apollo 15

Two Flights (10)

Edwin E. Aldrin, Jr.	Gemini 12, Apollo 11
Neil A. Armstrong	Gemini 8, Apollo 11
Alan L. Bean	Apollo 12, Skylab 3
Frank Borman	Gemini 7, Apollo 8
Michael Collins	Gemini 10, Apollo 11
L. Gordon Cooper	Mercury 9, Gemini 5
Richard F. Gordon, Jr.	Gemini 11, Apollo 12
Virgil I. Grissom	Mercury 4, Gemini 3
James A. McDivitt	Gemini 4, Apollo 9
Alan B. Shepard, Jr.	Mercury 3, Apollo 14

Three Flights (3)

Eugene A. Cernan	Gemini 9, Apollo 10, Apollo 17
Walter M. Schirra, Jr.	Mercury 8, Gemini 6, Apollo 7
David R. Scott	Gemini 8, Apollo 9, Apollo 15

Four Flights (4)

Charles Conrad, Jr.	Gemini 5, Gemini 11, Apollo 12, Skylab 2
James A. Lovell, Jr.	Gemini 7, Gemini 12, Apollo 8, Apollo 13
John W. Young	Gemini 3, Gemini 10, Apollo 10, Apollo 16
Thomas P. Stafford	Gemini 6, Gemini 9, Apollo 10, Apollo Soyuz Test Project

ASTRONAUTS COMPARATIVE SPACE FLIGHT TIME

<u>ASTRONAUT</u>	<u>FLIGHTS</u>	<u>HRS., MINS.</u>
Carr	1	2017:15
Gibson	1	2017:15
Pogue	1	2017:15
*Bean (4th)	2	1671:45
Garriott	1	1427:09
Lousma	1	1427:09
*Conrad (3rd)	4	1179:38
Lovell	4	715:05
Kerwin	1	672:49
Weitz	1	672:49
*Cernan (11th)	3	566:15
*Scott (7th)	3	546:54
*Young (9th)	4	533:33
Stafford	4	507:43
Borman	2	477:36
McDivitt	2	338:57
Gordon	2	315:53
Evans	1	301:51
*Schmitt (12th)	1	301:51
Schirra	3	295:13
*Irwin (8th)	1	295:11
Worden	1	295:11
*Aldrin (2nd)	2	289:53
Collins	2	266:05
Mattingly	1	265:51
*Duke (10th)	1	265:51
Eisele	1	260:09
Cunningham	1	260:09
Schweickart	1	241:01
Cooper	2	225:15
Brand	1	217:28
Slayton	1	217:28
*Shepard (5th)	2	216:17
*Mitchell (6th)	1	216:01
Roosa	1	216:01
*Armstrong (1st)	2	206:00
Anders	1	147:00
Haise	1	142:54
Swigert	1	142:54
White	1	97:56
Grissom	2	5:08
Carpenter	1	4:56
Glenn	1	4:55

*Walked on the lunar surface (in order of walk)

U.S. MANNED FLIGHT RECORD

(Names listed below the dotted lines are backup crews. Names in parentheses are launch vehicles.)

KEY: C - Commander
CM - Command Module Pilot
DM - Docking Module Pilot
LM - Lunar Module Pilot
P - Pilot
SP - Science Pilot

Mission	Crew	Date	Duration Hr:Min:Sec	Remarks
Mercury 3 (Redstone) "Freedom 7"	Shepard, Alan B., Jr. ----- Glenn, John H.	May 5, 1961	00:15:22	Suborbital flight -- first American in space; USS Champlain, Atlantic recovery.
Mercury 4 (Redstone) "Liberty Bell 7"	Grissom, Virgil I. ----- Glenn, John H.	July 21, 1961	00:15:37	Also suborbital; successful but spacecraft sank, astronaut rescued. USS Randolph, Atlantic recovery.
Mercury 6 (Atlas) "Friendship 7"	Glenn, John H. ----- Carpenter, M. Scott	February 20, 1962	04:55:23	Three-orbit flight; first American in orbit; retropack retained when erroneous signal indicated heat shield possibly loose; capsule landed 40 miles uprange; USS Noa, Atlantic recovery.
Mercury 7 (Atlas) "Aurora 7"	Carpenter, M. Scott ----- Schirra, Walter M., Jr.	May 24, 1962	04:56:05	Also three-orbit; yaw error at manual retrofire caused 250-mile landing overshoot; USS Pierce, Atlantic recovery.
Mercury 8 (Atlas) "Sigma 7"	Schirra, Walter M., Jr. ----- Cooper, L. Gordon	October 3, 1962	09:13:11	Six-orbit flight; capsule landed 4 1/2 miles from recovery ship USS Kearsarge, Pacific recovery.
Mercury 9 (Atlas) "Faith 7"	Cooper, L. Gordon ----- Shepard, Alan B., Jr.	May 15-16, 1963	34:19:49	Twenty-two orbits to evaluate effects on man of 1 day in space; landed 4 1/2 miles from USS Kearsarge, Pacific recovery.

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Mission	Crew	Date	Duration Hr:Min:Sec	Remarks
Gemini 3 (Titan) "Molly Brown"	C Grissom, Virgil I. P Young, John W. ----- C Schirra, Walter M., Jr. P Stafford, Thomas P.	March 23, 1965	04:53:00	Three-orbit demonstration of the spacecraft; maneuver over Texas on first pass changed orbital path of a manned spacecraft for first time; landed about 50 miles uprange; USS Intrepid, Atlantic recovery.
Gemini 4 (Titan)	C McDivitt, James A. P White, Edward H. II ----- C Borman, Frank P Lovell, James A., Jr.	June 3-7, 1965	97:56:11	Four-day flight with White first American to walk in space in 20-minute extravehicular activity (hatch open 36 minutes); after 62 revolutions of Earth, landed 50 miles uprange from USS Wasp, Atlantic recovery.
Gemini 5 (Titan)	C Cooper, L. Gordon P Conrad, Charles, Jr. ----- C Armstrong, Neil A. P See, Elliott J.	August 21-29, 1965	190:55:14	First use of fuel cells for electric power; evaluated guidance and navigation system for future rendezvous missions; incorrect navigation coordinates from ground control resulted in landing 90 miles short; 120 revolutions; USS Lake Champlain, Atlantic recovery.
Gemini 7 (Titan)	C Borman, Frank P Lovell, James A., Jr. ----- C White, Edward H. II P Collins, Michael	December 4-18, 1965	330:35:31	Longest-duration Gemini flight; provided rendezvous target for Gemini 6A; crew flew portions of mission in shirtsleeves for first time; 206 revolutions; landed 6.4 miles from target, USS Wasp, Atlantic recovery.
Gemini 6-A (Titan)	C Schirra, Walter M., Jr. P Stafford, Thomas P. ----- C Grissom, Virgil I. P Young, John W.	December 15-16, 1965	25:51:24	Rescheduled to rendezvous with Gemini 7 after original target Agena failed to orbit; 6-A launch postponed 3 days when launch vehicle engines automatically shut down 1.2 seconds after ignition; completed first space rendezvous; after 16 revolutions, landed within 7 miles of target to initiate series of pinpoint landings by Gemini spacecraft, USS Wasp, Atlantic recovery.

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Mission	Crew	Date	Duration Hr:Min:Sec	Remarks
Gemini 8 (Titan)	C Armstrong, Neil A. P Scott, David R. ----- C Conrad, Charles, Jr. P Gordon, Richard F., Jr.	March 16, 1966	10:41:26	First docking of one space vehicle with another; about 27 minutes after docking, Gemini-Agena combination began to yaw and roll at increasing rates; emergency procedures included undocking, deactivation of malfunctioning spacecraft control system, activation of reentry control system. Mission was terminated and midway through 7th revolution, spacecraft landed 1.1 miles from planned landing point in secondary recovery area in western Pacific; destroyer USS Mason picked up crew 3 hours later.
Gemini 9-A (Titan)	C Stafford, Thomas P. P Cernan, Eugene A. ----- C Lovell, James A., Jr. P Aldrin, Edwin E., Jr.	June 3-6, 1966	72:21:00	Rescheduled to rendezvous and dock with augmented docking adapter after original target Agena failed to orbit; ATDA shroud did not completely separate, making docking impossible; three different types of rendezvous were completed; Cernan carried out 2 hours, 7 minutes of EVA; 44 revolutions; 0.38 miles from target, USS Wasp, Atlantic recovery.
Gemini 10 (Titan)	C Young, John W. P Collins, Michael ----- C Bean, Alan L. P Williams, Clifton C.	July 18-21, 1966	70:46:39	First use of Agena target vehicle's propulsion systems; spacecraft also rendezvoused with Gemini 8 target vehicle; Collins had 49 minutes of EVA standing in hatch, 39-minute EVA to retrieve experiment from Agena 8; 43 revolutions, 3.4 miles, USS Guadalcanal, Atlantic recovery.

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Mission	Crew	Date	Duration Hr:Min:Sec	Remarks
Gemini 11 (Titan)	C Conrad, Charles, Jr. P Gordon, Richard F., Jr. ----- C Armstrong, Neil A. P Anders, William A.	September 12-15, 1966	71:17:08	Gemini record altitude (739.2 miles) reached using Agena propulsion after first-revolution rendezvous and docking; Gordon fastened Agena-anchored tether to Gemini docking bar, and spacecraft later made 2 revolutions of Earth in tethered configuration; Gordon 33-minute EVA and 2-hour, 5-minute standup EVA; 44 revolutions; 1.5 miles, USS Guam, Atlantic recovery.
Gemini 12 (Titan)	C Lovell, James A., Jr. P Aldrin, Edwin E., Jr. ----- C Cooper, L. Gordon P Cernan, Eugene A.	November 11-15, 1966	94:34:31	Final Gemini flight; Aldrin logged 2-hour 29-minute EVA for Gemini record total of 5 hours 30 minutes of extravehicular activity; 59 revolutions, 2.6 miles, USS Wasp, Atlantic recovery.
Apollo 7 (Saturn 1B)	C Schirra, Walter M., Jr. CM Eisele, Donn F. LM Cunningham, Walter ----- C Stafford, Thomas P. CM Young, John W. LM Cernan, Eugene A.	October 11-22, 1968	260:09:03	First manned flight of Apollo spacecraft command-service module only, 163 revolutions; USS Essex, Atlantic recovery -- all Apollo spacecraft splashed down within 10 miles of predicted landing point.
Apollo 8 (Saturn V)	C Borman, Frank CM Lovell, James A., Jr. LM Anders, William A. ----- C Armstrong, Neil A. CM Aldrin, Edwin E., Jr. LM Haise, Fred W., Jr.	December 21-27, 1968	147:00:42	First flight to the Moon (command-service module only); views of lunar surface televised to Earth; 10 revolutions of the Moon; USS Yorktown, Pacific recovery.

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Mission	Crew	Date	Duration		Remarks
			Hr:Min:Sec		
Apollo 9 (Saturn V) CM "Gumdrop" LM "Spider"	C McDivitt, James A., Jr.	March 3-13, 1969	241:00:54		First manned flight of lunar module; Schweickart 37-minute EVA from LM; 151 revolutions; USS Guadalcanal, Atlantic recovery.
	CM Scott, David R.				
	LM Schweickart, Russell L.				

	C Conrad, Charles, Jr.				
Apollo 10 (Saturn V) CM "Charlie Brown" LM "Snoopy"	CM Gordon, Richard F.	May 18-26, 1969	192:03:23		First lunar module orbit of Moon; 31 revolutions of Moon (4 revolutions by undocked LM); USS Princeton, Pacific recovery.
	LM Bean, Alan L.				
	C Stafford, Thomas P.				
	CM Young, John W.				
	LM Cernan, Eugene A.				
Apollo 11 (Saturn V) CM "Columbia" LM "Eagle"	-----	July 16-24, 1969	195:18:35		First lunar landing; Sea of Tranquility; lunar stay time 21 hours 36 minutes 21 seconds; Armstrong and Aldrin EVA(hatch open to hatch close) 2 hours 31 minutes 40 seconds; lunar surface samples 48.5 pounds; 30 revolutions; USS Hornet, Pacific recovery.
	C Cooper, L. Gordon				
	CM Eisele, Donn F.				
	LM Mitchell, Edgar D.				

Apollo 12 (Saturn V) CM "Yankee Clipper" LM "Intrepid"	C Armstrong, Neil A.	November 14-24, 1969	244:36:25		Ocean of Storms; stay time 31 hours 31 minutes; Conrad and Bean EVAs 3 hours 56 minutes and 3 hours 49 minutes; lunar samples 74.7 pounds plus parts from Surveyor 3 unmanned spacecraft; 45 revolutions; USS Hornet, Pacific recovery.
	CM Collins, Michael				
	LM Aldrin, Edwin E., Jr.				

	C Lovell, James A., Jr.				
Apollo 12 (Saturn V) CM "Yankee Clipper" LM "Intrepid"	CM Anders, William A.	November 14-24, 1969	244:36:25		Ocean of Storms; stay time 31 hours 31 minutes; Conrad and Bean EVAs 3 hours 56 minutes and 3 hours 49 minutes; lunar samples 74.7 pounds plus parts from Surveyor 3 unmanned spacecraft; 45 revolutions; USS Hornet, Pacific recovery.
	LM Haise, Fred W., Jr.				

	C Conrad, Charles, Jr.				
	CM Gordon, Richard F.				
Apollo 12 (Saturn V) CM "Yankee Clipper" LM "Intrepid"	LM Bean, Alan L.	November 14-24, 1969	244:36:25		Ocean of Storms; stay time 31 hours 31 minutes; Conrad and Bean EVAs 3 hours 56 minutes and 3 hours 49 minutes; lunar samples 74.7 pounds plus parts from Surveyor 3 unmanned spacecraft; 45 revolutions; USS Hornet, Pacific recovery.

	C Scott, David R.				
	CM Worden, Alfred M.				
	LM Irwin, James B.				

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Mission	Crew	Date	Duration		Remarks
			Hr:Min:Sec		
Apollo 13 (Saturn V) CM "Odyssey" LM "Aquarius"	C Lovell, James A., Jr. CM Swigert, John L., Jr. LM Haise, Fred W., Jr. ----- C Young, John W. CM Swigert, John L., Jr. LM Duke, Charles M., Jr.	April 11-17, 1970	142:54:41		Mission aborted after service module oxygen tank ruptured; using lunar module oxygen and power until just before re-entry, crew returned safely to Earth; USS Iwo Jima, Pacific recovery.
Apollo 14 (Saturn V) CM "Kitty Hawk" LM "Antares"	C Shepard, Alan B., Jr. CM Roosa, Stuart A. LM Mitchell, Edgar D. ----- C Cernan, Eugene A. CM Evans, Ronald E. LM Engle, Joe H.	January 31 to February 9, 1971	216:01:57		Fra Mauro, stay time 33:31; Shepard and Mitchell EVAs 4:48 and 4:35; samples 96 pounds; 34 revolutions; USS New Orleans, Pacific recovery.
Apollo 15 (Saturn V) CM "Endeavour" LM "Falcon"	C Scott, David R. CM Worden, Alfred M. LM Irwin, James B. ----- C Gordon, Richard F., Jr. CM Brand, Vance D. LM Schmitt, Harrison H.	July 26 to August 7, 1971	295:11:53		Hadley Apennine; first use of lunar roving vehicle; stay time 66:55; Scott standup EVA 33 minutes, Scott and Irwin EVAs 6:33; Worden trans-Earth EVA 38 minutes; samples 170 pounds; 74 revolutions; USS Okinawa, Pacific recovery.
Apollo 16 (Saturn V) CM "Casper" LM "Orion"	C Young, John W. CM Mattingly, Thomas K. II LM Duke, Charles M., Jr. ----- C Haise, Fred W., Jr. CM Roosa, Stuart A. LM Mitchell, Edgar D.	April 16-27, 1972	265:51:05		Descartes highlands, stay time 71:02; Young and Duke EVAs 7:11, 7:23 and 5:40, Mattingly trans-Earth EVA 1:24; samples 213 pounds; 64 revolutions; USS Ticonderoga, Pacific recovery.
Apollo 17 (Saturn V) CM "America" LM "Challenger"	C Cernan, Eugene A. CM Evans, Ronald E. LM Schmitt, Harrison H. ----- C Young, John W. CM Roosa, Stuart A. LM Duke, Charles M., Jr.	December 7-19, 1972	301:51:59		Taurus-Littrow, stay time 75:00; Cernan and Schmitt EVAs 7:12, 7:37 and 7:15, Evans trans-Earth EVA 1:06; samples 243 pounds; 75 revolutions; USS Ticonderoga, Pacific recovery. First night launch; December 6 in Central, Mountain and Pacific time zones.

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Mission	Crew	Date	Duration Hr:Min:Sec	Remarks
Skylab 2 (Saturn 1B)	C Conrad, Charles, Jr. SP Kerwin, Joseph P., Dr. P Weitz, Paul J. ----- C Schweickart, Russell L. SP Musgrave, F. Story, Dr. P McCandless, Bruce II	May 25 to June 22, 1973	672:49:49 (28 days)	First U.S. manned orbiting space station mission; crew deployed solar shield; released stuck solar panel. These repair activities permitted manned operations of the Orbital Workshop after meteoroid shield was damaged and torn off during boost. Data obtained on 46 of 55 experiments. Crew performed 3 space walks totaling 5 hours 41 minutes; USS Ticonderoga.
Skylab 3 (Saturn 1B)	C Bean, Alan L. SP Garriott, Owen K., Dr. P Lousma, Jack R. ----- C Brand, Vance D. SP Lind, Don L., Dr. P Lenoir, William E., Dr.	July 28 to September 25, 1973	1427:09:04 (59 days)	Crew performed systems and operational tests, deployed new solar shield, replaced rate gyros. Crew substantially exceeded premission plans for scientific activities. Performed 3 space walks totaling 13 hours 44 minutes; USS New Orleans.
Skylab 4 (Saturn 1B)	C Carr, Gerald P. SP Gibson, Edward G., Dr. P Pogue, William R. ----- C Brand, Vance D. SP Lind, Don L., Dr. P Lenoir, William E., Dr.	November 16, 1973 to February 8, 1974	2017:15:32 (84 days)	Final Skylab manned visit; longest flight of men in space. Crew replenished coolant supplies, repaired antenna, made observations of Comet Kohoutek. Crew performed 4 space walks totaling 22 hours, 21 minutes. Set record for space walk duration -- 7 hours 1 minute; USS New Orleans.
Apollo Soyuz Test Project (Saturn 1B)	C Stafford, Thomas P. CM Brand, Vance D. DM Slayton, Donald K. ----- C Bean, Alan L. CM Evans, Ronald E. DM Lousma, Jack R.	July 15-24, 1975	217:28:24 (9 days)	First U.S.-U.S.S.R. joint manned mission; accomplished spacecraft rendezvous and docking; crew transfer; docking and undocking; interaction of control centers and interaction of spacecraft crews; USS New Orleans.

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EXTRAVEHICULAR ACTIVITY (EVA) RECORD

Mission	Launch Date	In-Flight		Lunar Exploration		Lunar-Stay Time	
		Astronaut	Hrs/Min	Astronaut	Hrs/Min	Hrs/Min	Site
Gemini 4	6/3/65	White	00:23				
Gemini 9	6/3/66	Cernan	2:10				
Gemini 10	7/18/66	Collins	1:27				
Gemini 11	9/12/66	Gordon	2:44				
Gemini 12	11/11/66	Aldrin	5:30				
Apollo 9	3/3/69	Schweickart	00:46				
Apollo 11	7/16/69			Armstrong	2:40	21:36	Sea of Tranquility
Apollo 12	11/14/69			Aldrin	2:15		
Apollo 14	1/31/71			Conrad	7:45	31:31	Ocean of Storms
Apollo 15	7/26/71	Worden		Bean			
Apollo 16	4/16/72	Mattingly		Shepard	9:17	33:30	Fra Mauro
Apollo 17	12/7/72	Evans		Mitchell			
				Scott	18:35	66:54	Hadley
				Irwin			Apennine
				Young	20:15	71:14	Descartes
				Duke			
				Cernan	22:04	74:59	Taurus-Littrow
				Schmitt			
Skylab SL 1&2 1st Manned Visit	5/25/73	Conrad Kerwin Weitz	6:34 3:58 2:11				
Skylab SL 3 2nd Manned Visit	7/28/73	Bean Garriott Lousma	2:41 13:42 11:01				
Skylab SL 4 3rd Manned Visit	11/16/73	Carr Gibson Pogue	15:48 15:17 13:31				

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